Article from **Commercial Investment Real Estate Magazine**

March-April 2010

Greening to Compete

Owners roll out sustainability programs to maintain their tenant base.
By Beth Young, CCIM, LEED-AP

Are sustainability and energy efficiency upgrades playing a role in today's down commercial real estate market? Definitely, say those in the field.

"I recently lost a 20,000-square-foot office tenant to a Silver LEED [Leadership in Energy and Environmental Design] certified building that was $2.12 more per square foot than our building," says Doug Webster, an office leasing specialist with Grubb & Ellis/The Furman Co. in Greenville, S.C. "The tenant's broker said they preferred our location, layout, and lower rate, but the fact that the [building] owners were not willing to institute a formal sustainability program caused this national engineering firm to select the LEED location. Subsequently, we are now working with the owners to put a rolling sustainability program in place as tenants vacate or update their space."

Researchers working with CoStar Group have studied the green trend and the findings support this example. Since 2005, the nationwide difference in occupancy rates between Energy Star buildings and their peers has grown from almost zero to approximately 2.5 percent in 2009. The occupancy rate difference is 5.4 percent when LEED-certified buildings are compared to non-certified buildings.

National rental rate differences for Energy Star buildings vs. their peers have increased from $2.32 psf in 2005 to $4.73 psf in 2009. If only LEED-certified buildings are compared to non-certified buildings, the rental rate gulf is $9.06 psf. These are serious incentives for landlords to upgrade their office buildings.

David Brewer, president of Brewer & Escalante, an engineering firm in Houston, has offices in a non-green building currently; however, he will only consider LEED-certified buildings for his next lease. Fortunately he will have a number of choices: At year-end 2009, Houston had 60 LEED-certified buildings and 600 additional buildings that are LEED registered. Landlords are quickly realizing that besides being environmentally minded, they must make energy-saving improvements simply to compete for tenants — especially in a down market.

Sealing the Envelope

What retrofitting measures offer the most return on the investment when either selling the building or attracting tenants and achieving higher rental and occupancy rates?

Energy savings is the obvious place to start. The larger wastes are in lighting, heating, ventilation, and air conditioning systems, and the thermal envelope of the building. More than 70 percent of existing buildings have not upgraded lighting, HVAC, insulation, or windows, according to engineering research reports. Yet a 2006 U.S. Green Building Council survey found that building owners save 90 cents psf annually by retrofitting their properties, and earn back their investment in two to 2.5 years.

Before making any changes, find out where and how much energy is currently being used. Many utility companies will do a free or inexpensive energy audit to discover a building's unique energy deficiencies and potential for improvement, says Timothy Buckley, LEED-AP, an architect with Greenstone Architecture in Vancouver, Wash. "Based on the energy audit findings, you can then assess upgrade needs, estimate first costs and returns on the investments, and begin establishing priorities for upgrades," Buckley says.

Building envelopes can provide quick savings when renovated. Upgrading insulation can be a low-cost improvement with a fast return. Weather stripping and weather sealing, for example, quickly improves the building's defenses. A more costly change that has a big impact on savings is the replacement of old windows and doors with new high-performance versions.

In 2009, the General Services Administration Workplace Performance Study concluded that if only 40 percent of GSA-owned buildings were retrofitted with properly sealed high-performance R4 windows with high visible transmission (60 percent or greater) to maximize daylight, the estimated annual energy savings

would be $12.8 million. Upgrading windows also will contribute to human comfort and performance by reducing drafts and noise and improving end-user access to daylight and views. The greater efficiency will pay for the cost difference in three to five years, the study reported.

Lighting the Way

Lighting system upgrades range from simple changes to a complete replacement. Easy changes include reducing excessive or unneeded lighting. For example, on a small scale, one lamp can be removed from existing three-tube fluorescent systems, and for larger areas, occupancy sensors and time clocks can automatically reduce hours of lighting. A Portland, Ore., building owner replaced the 24-hour, seven-days-a-week fluorescent lighting in a four-acre parking garage with motion-activated lights that dim by 90 percent when no one is around. The same approach can be used in interior restrooms, storage areas, hallways, and other infrequently used common areas.

"If considering a wholesale lighting replacement, look at reducing lighting power budgets and using high-efficiency low-mercury fluorescent systems, or even LED," Buckley says. "The initial cost of LED technology is still pretty steep; however, the energy savings over time are significant — up to 70 percent, according to some universities that have made the switch. And it may make it worthwhile when considering LED's incredibly long life. The reduced maintenance and costs savings associated with not having to re-lamp other systems can be a huge factor."

Deregulated purchasing of electricity at lower rates is another area for great cost savings. Grubb & Ellis manages facilities-related purchasing for United Stationers at 80 locations across the U.S. It purchased electricity at lower rates in deregulated states for a savings of $865,000.

The owner of New York's Sony Building also chose Grubb & Ellis to manage the building, including reducing energy and operating expenses. Solutions included making recommendations for electricity purchasing and including the Sony Building in a pooled bid. G&E also reduced peak rate charges by reviewing electrical charges and time-of-day usage records to determine spike usage. After isolating the cause and changing procedures, G&E reduced the building's electrical costs by $1 million per year. A lighting retrofit resulted in additional energy savings and a local tax rebate of $400,000.

In another example, a national financial-services company implemented numerous initiatives in the operation of the building's HVAC equipment, reduced interior lighting, added more lighting controls, and installed carbon dioxide and motion sensors to increase efficiency and reduce waste. Their sustainability efforts yielded an annual estimated energy savings of 11 percent.

In Portland, the 17-story Liberty Centre office building received a BOMA award in 2007 for its superior energy efficiency. As much as 30 percent of the building's energy is renewable and it has seen energy savings of more than $40,000 a year.

On a smaller scale, a creative way to reduce operating expenses is to go from a gross or full-service lease including electricity to a net lease with separate metering of electricity for each tenant. Studies show that tenants receiving individual utility bills consume an average of 21 percent less electricity.

Turning Off the Water

Water reduction is another area of significant savings. One of the most beneficial changes can be in the retrofit of a building's interior water fixtures. For example, efficient water faucets and toilets provided a 67 percent return on investment in as little as 1.5 years for 200 Market Street in Portland, Ore. "The 19-story building achieved a 31 percent water-use reduction beyond the Uniform Plumbing Code by retrofitting their plumbing fixtures," says Elaine Aye of Green Building Services, who managed the building's LEED certification process.

Once changes have been made, it's important to make sure they continue working as designed. "A continuous monitoring system can be installed to diligently monitor [the building's] energy use and also allow for system adjustments," says Eric Haskins, a G&E vice president in Portland. "The engineers are notified by automated text message whenever building systems stray from their set parameters. This process ensures that the building's operational systems can be preemptively maintained."

Tenants and investors clearly are recognizing the value associated with sustainable upgrades, whether it affects the bottom line or improves their image with clients. With savings and returns like the examples given here, a more appropriate question might be, How can a landlord afford not to make green upgrades?

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The Future: Achieving Net-Zero Energy

Net-zero energy buildings are super energy-efficient, grid-connected buildings that use on-site generation systems, such as solar power and geothermal energy, to produce as much energy as they consume. The U.S. Department of Energy, through its Net-Zero Energy Commercial Building Initiative, aims to achieve marketable commercial net-zero energy buildings by 2025 and is working closely with industry leaders through the Commercial Building Energy Alliances to make it happen.

Commercial Building Energy Alliances are informal associations of building owners and operators who evaluate, test, and ultimately implement replicable approaches to creating a variety of energy-efficient buildings in several different climate zones. To date, DOE has created three alliances to represent specific sectors: the Retailer Energy Alliance, the Commercial Real Estate Energy Alliance, and the Hospital Energy Alliance.

Alliance members work with DOE and national laboratories to compare and contrast emerging technologies in real-life scenarios. Eventually, other commercial building owners and operators will use alliance members' experience and research to purchase energy-efficient technologies with a better idea of their potential return on investment.

Through a tandem program, the Commercial Building Partnerships, more than 20 companies and organizations will conduct research and development to construct new buildings that use 50 percent less energy and retrofit buildings that use 30 percent less energy. The teams will then share results with alliance members.

As of October 2009, 44 companies, representing 23 percent of the market share, belonged to the Commercial Real Estate Energy Alliance, and the Retailer Energy Alliance's membership includes 39 companies representing more than 17 percent of the market share. Alliance members include Re/Max Real Estate, Transwestern, USAA Real Estate Co., and Walmart. For more information on the Net-Zero Energy Commercial Building Initiative, visit www.commercialbuildings.energy.gov.

—by Dru Crawley, who leads the U.S. Department of Energy's Net-Zero Energy Commercial Building Initiative. For more information about the Commercial Building Energy Alliances, visit www.buildings.energy.gov/alliances.

Do Green Buildings Make Dollars and Sense?

The University of San Diego's Burnham-Moores Center for Real Estate is working to uncover the financial impact of sustainability on real estate markets. A well-cited 2008 paper by USD Professor Norm Miller and Jay Spivey and Andy Florance of CoStar found that green U.S. office buildings — defined as either LEED or Energy Star-certified — enjoy higher occupancy rates, higher rents, and lower operating expenses, when compared with non-green buildings with similar characteristics. [See main article.]

The results also show higher sales prices by nearly 15 percent more per square foot. This is an encouraging sign for those investing in energy savings, particularly considering that the estimated cost of achieving, for example, LEED Silver status, is modest, ranging from 0 percent to 5 percent in additional building costs.

More recently, Burnham-Moores researchers teamed up with CB Richard Ellis to measure the productivity of tenants in green buildings. Property managers and tenants in 154 green buildings managed by CBRE nationwide participated in an online survey, which used two measures of productivity: self-reports and number of sick days. More than half of the respondents said their employees have been more productive since moving into the green space. Forty-five percent of tenants surveyed experienced fewer employee sick days, with another 45 percent experiencing no change.

Researchers also explored the marketplace barriers that exist to building green. USD Professors Louis Galuppo and Charles Tu surveyed real estate capital market participants to assess their perceptions regarding the costs, benefits, and risks of green buildings. The overwhelming majority of the respondents believed that an energy-efficient building has higher value than a comparable traditional building, although they also thought green buildings cost more to construct. When asked if they believed green buildings generate a net benefit, nearly 60 percent said yes, slightly more than 20 percent said no, and about 20 percent were not sure. The results indicate that many capital providers are still skeptical about the economics of building green.

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